

## **Fact Sheet for IPDES Permit No. ID0024252**

3/01/2021

Idaho Department of Environmental Quality (DEQ) proposes to reissue an Idaho Pollutant Discharge Elimination System (IPDES) Permit to discharge pollutants pursuant to the provisions of IDAPA 58.01.25 to:

**City of White Bird  
Publicly Owned Treatment Works  
225 Cooper St.  
White Bird, ID 83554**

Public Comment Start Date: 12/09/2020

Public Comment Expiration Date: 01/08/2021

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### **Purpose of this Fact Sheet**

This fact sheet explains and documents the decisions the Idaho Department of Environmental Quality (DEQ) made in writing the draft Idaho Pollutant Discharge Elimination System (IPDES) permit for City of White Bird.

This fact sheet complies with IDAPA 58.01.25.108.02 of the Idaho Administrative Code, which requires DEQ to prepare a draft permit and accompanying fact sheet for public evaluation before issuing an IPDES permit.

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## Acronyms

1Q10	1 day, 10 year low flow
7Q10	7 day, 10 year low flow
30B3	Biologically-based design flow intended to ensure an excursion frequency of less than once every three years, for a 30-day average flow.
30Q5	30-day, 5 year low flow
30Q10	30-day, 10 year low flow
AML	Average Monthly Limit
BOD <sub>5</sub>	Biochemical Oxygen Demand, five-day
BMP	Best Management Practices
°C	Degrees Celsius
CBOD <sub>5</sub>	Carbonaceous Biochemical Oxygen Demand, five-day
CFR	Code of Federal Regulations
CFS	Cubic Feet per Second
CV	Coefficient of Variation
CWA	Clean Water Act
DEQ	Idaho Department of Environmental Quality
DMR	Discharge Monitoring Report
EPA	U.S. Environmental Protection Agency
IDAPA	Refers to citations of Idaho administrative rules
IDWR	Idaho Department of Water Resources
I/I	Inflow and Infiltration
IPDES	Idaho Pollutant Discharge Elimination System
lb/day	Pounds per day
LD <sub>50</sub>	Dose at which 50% of test organisms die in a specified time period
LTA	Long Term Average
MDL	Maximum Daily Limit or Method Detection Limit
MGD	Million gallons per day
mg/L	Milligrams per liter
mL	Milliliters
O&M	Operations and Maintenance
POC	Pollutant(s) of Concern
POTW	Publicly Owned Treatment Works

QAPP	Quality Assurance Project Plan
RPA	Reasonable Potential Analysis
RPMF	Reasonable Potential Multiplication Factor
RPTE	Reasonable Potential To Exceed
SIU	Significant Industrial User
s.u.	Standard Units
TBEL	Technology Based Effluent Limits
TMDL	Total Maximum Daily Load
TRC	Total Residual Chlorine
TRE	Toxicity Reduction Evaluation
TSD	Technical Support Document for Water Quality-based Toxics Control (EPA/505/2-90-001)
TSS	Total Suspended Solids
TU <sub>c</sub>	Toxic Units, Chronic
WET	Whole Effluent Toxicity
USGS	United States Geological Survey
WLA	Wasteload Allocation
WQBEL	Water Quality-Based Effluent Limit
WQC	Water Quality Criteria
WQS	Water Quality Standards

# 1 Introduction

This fact sheet provides information on the draft permit for the Idaho Department of Environmental Quality (DEQ) Idaho Pollutant Discharge Elimination System (IPDES) permit for the City of White Bird. This fact sheet complies with the Rules Regulating the Idaho Pollutant Discharge Elimination System Program (IDAPA 58.01.25), which requires DEQ to prepare a draft permit and accompanying fact sheet for public evaluation before issuing an IPDES permit.

DEQ proposes to issue the IPDES permit for the City of White Bird Publicly Owned Treatment Works (White Bird POTW). To ensure protection of water quality and human health, the permit places conditions on the type, volume, and concentration of pollutants discharged from the facility to waters of the United States.

This fact sheet includes:

- a map and description of the discharge location;
- a listing of draft effluent limits and other conditions the facility must comply with;
- documentation supporting the draft effluent limits;
- technical material supporting the conditions in the permit; and
- information on public comment, public hearing, and appeal procedures.

Terms used in this fact sheet are defined in Section 5, Definitions, of the permit.

## Public Comment

The draft permit and fact sheet describing the terms and conditions applicable to the permittee are available for public review and comment during a public comment period. The public is provided at least 30 days to provide comments to DEQ. Persons wishing to request a public meeting for this facility's draft permit must do so in writing within 14 calendar days of public notice being published that a draft permit has been prepared; requests for public meetings must be submitted to DEQ by insert date. Requests for extending a public comment period must be provided to DEQ in writing before the last day of the comment period. For more details on preparing and filing comments about these documents, please see the IPDES guidance *Public Participation in the Permitting Process* (DEQ 2016) at <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/4814>. For more information, please contact the permit writer.

After the close of the public comment period, DEQ considers information provided by the public, prepares a document summarizing the public comments received, and may make changes to the draft permit in response to the public comments. DEQ will include the summary and responses to comments in Appendix D of the final fact sheet. After the public comment period and prior to issuing the final permit decision, DEQ will also provide the applicant an opportunity to submit additional information to respond to public comments. DEQ will assess the public comment in conjunction with any additional information received from the applicant and develop a proposed permit.

The Environmental Protection Agency (EPA) may take up to 90 days from the publication of public notice of the draft permit to develop and document specific grounds for objections to a proposed permit. If EPA objects to a proposed permit DEQ must satisfactorily address the

objections within the time period specified in the memorandum of agreement between EPA and DEQ (40 CFR §123.44). Otherwise, EPA may issue a permit in accordance with 40 CFR Parts 121, 122, 124. If EPA issues the permit, any state, interstate agency, or interested person may request EPA hold a public hearing regarding the objection.

### **Permit Issuance**

Following the public comment period(s) on a draft permit and after receipt of any comments on the proposed permit from EPA, DEQ will issue a final permit decision, the final permit, and the fact sheet. All comments received will be addressed in Appendix D of the final fact sheet and any resulting changes to the permit or fact sheet documented. A final permit decision means a final decision to issue, deny, modify, revoke and reissue, or terminate a permit (IDAPA 58.01.25.107.04). The final permit and final fact sheet will be posted on the DEQ website. Response to comments will be located in the final fact sheet as an appendix.

The permit holder or applicant and any person or entity who filed comments or who participated in a public meeting on the draft permit may file a petition for review of a permit decision as outlined in Appendix C. The petition for review must be filed with DEQ's hearing coordinator within 28 days after DEQ serves notice of the final permit decision. Any party that participated in the petition for review that is still aggrieved by the final IPDES action or determination has a right to file a petition for judicial review (IDAPA 58.01.25.204.26).

### **Documents are Available for Review**

The permit application, IPDES permit, and fact sheet can be reviewed or obtained by visiting or contacting the DEQ State office between 8:00 a.m. and 5:00 p.m., Monday through Friday at the address below. The application, draft permit, and fact sheet can also be found by visiting the DEQ website at <https://www.deq.idaho.gov/public-information/public-comment-opportunities/>.

DEQ  
1410 N. Hilton St.  
Boise, ID 83706  
208-373-0502

The IPDES permit and fact sheet are also available at the DEQ Regional Office:

DEQ Lewiston Regional Office  
1118 F Street  
Lewiston, ID 83501  
208-799-4370

### **Disability Reasonable Accommodation Notice**

For technical questions regarding the permit or fact sheet, contact the permit writer at the phone number or e-mail address at the beginning of this fact sheet. Those with impaired hearing or speech may contact a TDD operator at 1-800-833-6384 (ask to be connected to the permit writer at the above phone number). Additional services can be made available to a person with disabilities by contacting the permit writer identified on the cover of this fact sheet.

## 2 Background Information

### 2.1 Facility Description

This fact sheet provides information on the 2021 IPDES permit for the following entity:

**Table 1. Facility information**

Permittee	City of White Bird Publicly Owned Treatment Works (POTW)
Facility Physical Address	City of White Bird POTW River Rd. White Bird, ID 83354
Facility Mailing Address	PO Box 74 White Bird, Idaho 83354
Facility Contact	Doug Buys Operator 208-469-9523
Responsible Official	Homer Brown Mayor 208-839-2294
Facility Location	Latitude: 45.758621° Longitude: -116.305307°
Receiving Water Name	Whitebird Creek
Outfall Location	Latitude: 45.758375° Longitude -116.306657°
<b>Permit Status</b>	
Application Submittal Date	October 12 <sup>th</sup> , 2016
Date Application Deemed Complete	October 12 <sup>th</sup> , 2016

The City of White Bird (City) owns and operates the POTW located in White Bird, Idaho that discharges continuously to Whitebird Creek. The collection system has no combined sewers. The facility serves a resident population of 91 based on their permit application and there are no major industries discharging to the facility.

#### 2.1.1 Facility Information

The design flow of the facility is 0.03 mgd. The treatment process consists of a gravity conveyed sewer system that uses a lift station to pump sewage from the headworks wet well into the treatment works. The City's previous treatment works was limited to two aerated lagoons that discharged into an infiltration gallery. The City is currently operating an updated facility to process and treat all incoming wastewater. The new facility was constructed in 2019 and began effective operations August of 2019. The new treatment system is comprised of a fine screen at the headworks, two aerated lagoons, a sand filter and UV disinfection. Treated effluent is discharged to an infiltration gallery that is directly adjacent to Whitebird Creek. Details about the wastewater treatment process and a map showing the location of the treatment facility and discharge are included in Appendix A. Because the facility has a design flow less than 1 mgd,



serves less than 10,000 people, and will not cause significant water quality impacts, the facility is considered a minor facility.

### **2.1.2 Permit History**

The City has operated a POTW since 1978. The City originally applied for a NPDES permit to discharge to Whitebird Creek through the infiltration gallery and a draft permit was developed. A finalized permit was never issued to the City. The City has owned and operated the POTW since 1978.

### **2.1.3 Compliance History**

The City did not have a permit to comply with. Historical records indicate that one effluent data collection event occurred in the early 1980s by DEQ (then the State of Idaho Department of Health and Welfare, Division of Environmental Quality). This sampling was a one-time grab sample that indicated TSS removal efficiency of 50%, BOD removal of 69%, and fecal coliform count of 124 per 100 ml. Historical records also indicate that in the late 1970s through at least 1983 the facility experienced multiple high stream flows that flooded the sand filters and required pumping of a mixture of effluent and surface water into Whitebird Creek.

The new facility has been operating effectively since August of 2019 and the city has been collecting BOD<sub>5</sub>, TSS, and E.coli data to support this fact. The new facility data reflects treatment capacity necessary to meet Idaho and CWA requirements.

### **2.1.4 Sludge/Biosolids**

The EPA Region 10, under the authority of the Clean Water Act (CWA), issues separate sludge-only permits for the purpose of regulating biosolids. Permits for sludge management are independent of IPDES discharge permits and must be obtained from EPA. The IPDES program will take over permitting of sludge/biosolids in July 2021. In addition, sludge management plans must be submitted to DEQ and must follow the procedures in IDAPA 58.01.16.

This permit requires the facility to develop a sludge management plan and assess the sludge level accumulated in lagoons. This sludge depth information must be reported through the IPDES E-Permitting System as required in section 2.1.3 of the 2021 permit.

### **2.1.5 Outfall Description**

Outfall to Whitebird Creek will take place by means of an infiltration gallery which is directly connected to Whitebird Creek via subsurface channels. This connection is based on a letter dated December 22, 1978 from Ted D. Sorenson of Hamilton and Voeller, Inc. This letter states that "Test hole observations during design indicated a visual flow at groundwater toward the creek." A 2012 gradient study was conducted at the POTW that also concluded water flows towards Whitebird Creek. The outfall is six feet below grade surface and ten feet from Whitebird Creek. The infiltration gallery is located just west of town under the US Highway 95 bridge.

### 2.1.6 Wastewater Influent / Effluent Characterization

Table 2 provides historical flow data based on information from the 2016 City of White Bird Wastewater Facility Plan developed by Mountain Waterworks. This plan notes that there are no major industrial contributors and few commercial discharges into the system. In total there are 62 single residential connections and 8 business connections. The report also includes influent flow estimates based on 2013 pump run times.

Table 3 provides influent data collected from the new currently-operating facility.

**Table 2. Wastewater influent flow characterization.**

Average Annual Daily Flow	0.019 mgd
Peak Daily Flow	0.061 mgd
Avg. Wet Weather & Peak Month Daily Flow	0.030 mgd
Avg. Dry Weather Daily Flow	0.015 mgd

**Table 3. Wastewater influent pollutant characterization.**

Parameter	Units	# of Samples	Average Value	Maximum Value	Data Source
BOD <sub>5</sub>	mg/L	26	584	3040	8/2019 – 6/2020
TSS	mg/L	26	998	5800	8/2019 – 6/2020

Based on the lack of an NPDES permit, the City did not historically monitor effluent flow or pollutant concentrations of its facility. At the request of DEQ the City collected influent and effluent test samples to gather data from the old facility in 2018 to aid the permit development process. The sampling was done in September and October of 2018 and consisted of 5 sampling events. The tables below provide the 2018 old facility data (Table 4), design estimates for the new facility (Table 5), and recent sampling data from the new facility (Table 6).

**Table 4. 2018 Facility data averages.**

Parameter	Influent	Effluent	% removal
BOD <sub>5</sub> (mg/L)	234	35	84
TSS (mg/L)	209	50	72
E. coli (#/100mL)	---	>2,400	---

**Table 5. New facility wastewater effluent design estimates.**

Parameter	Units	Design Criteria
BOD <sub>5</sub>	mg/L	30
TSS	mg/L	30

**Table 6. 2019 - 2020 wastewater effluent characterization.**

Parameter	Units	# of Samples	Average Value	Maximum Value	Data Source
BOD <sub>5</sub>	mg/L	26	3.5	7.0	8/2019 – 6/2020
TSS	mg/L	26	4.3	15.0	8/2019 – 6/2020
BOD % removal	%	26	98.8	(Minimum) 95.1	8/2019 – 6/2020
TSS % removal	%	26	98.6	(Minimum) 92.4	8/2019 – 6/2020
E. coli	#/100 mL	26	0.7	10.9	8/2019 – 6/2020

## 2.2 Description of Receiving Water

The City discharges to Whitebird Creek in the Lower Salmon subbasin (HUC 17060209) Water Body Assessment Unit (AU) name Whitebird Creek - 4th Order Segment [ID17060209SL047\_04]. At the point of discharge, Whitebird is protected for the following designated uses (IDAPA 58.01.02.130.05 S-41):

- Cold water aquatic life (CWAL) (Fully supporting)
- Salmonid spawning (Unassessed)
- Primary contact recreation (Fully supporting)
- Domestic water supply (Unassessed)

In addition, WQSs state that all waters of the State of Idaho are protected for industrial and agricultural water supply, wildlife habitats, and aesthetics (IDAPA 58.01.02.100.03.b and c, 100.04, and 100.05).

According to DEQ's 2018/2020 Integrated Report (DEQ 2020), the receiving water body segment is in category 2 and is fully supporting cold water aquatic life and primary contact

beneficial uses. The fully supporting status of the beneficial uses requires tier II antidegradation protection.

The ambient background data for this facility is limited. There is no local USGS data and the facility has not been required to collect data due to the lack of a NPDES permit. The City conducted a ground water study from December 2012 through June 2013 which included 4 upstream monitoring dates (Table 7). USGS StreamStats program is used to best estimate critical flows of Whitebird Creek.

DEQ's Beneficial Use Reconnaissance Program (BURP) has assessed Whitebird Creek in past years. The data from the two most relevant sites are summarized in Table 8; both sites are upstream of the POTW and are downstream of the confluence of the south fork and north fork of Whitebird Creek. Of note are the Stream Macroinvertebrate Index (SMI), Stream Fish Index (SFI), and Stream Habitat Index (SHI) scores. A score of three is the highest possible for each of the different multi metric indexes. The DEQ 2018/2020 Integrated Report webpage also includes the statement below describing pathogen samples from Whitebird Creek.<sup>1</sup>

### *Primary Contact Recreation*

6/5/2013 (CB) - Four E. coli single samples were collected on May 29, 2013. Samples were collected from above and below the City of Whitebird wastewater treatment plant. The E. coli sample results (27.8, 32.3, 25.6 and 31.3 cfu/100 mL) did not exceed the single sample maximum for waters designated as primary contact recreation of 406 cfu/ 100 mL; therefore PCR is determined to be fully supporting.

**Table 7. Ambient background receiving water data (December 2012 – June 2013).**

Parameter	Units	Minimum Value	Maximum Value
Temperature	°C	6.1	14.7
pH	Standard units	6.6	8.3
Total Phosphorus	mg/L	0.04	0.82

**Table 8. BURP data 1999 & 2008.**

BURP site	Miles upstream	Date	Flow (cfs)	Temp (°C)	SMI	SFI	SHI
2008SLEWA030	2.9	7/24/08	18.3	20.8	3	3	3
1999SLEWT002	3.9	8/25/99	5.24	16.87	3	---	3

## **2.2.1 Water Quality Impairments**

Water bodies not supporting existing or designated beneficial uses must be identified as water quality limited, and a total maximum daily load (TMDL) must be prepared for those pollutants causing impairment. A central purpose of TMDLs is to establish wasteload allocations (WLAs) for point source discharges, which are set at levels designed to help restore the water body to a condition that supports existing and designated beneficial uses. Discharge permits must contain limits that are consistent with the assumptions and requirements of WLAs that have been assigned to the discharge in an EPA-approved TMDL.

<sup>1</sup> [https://mapcase.deq.idaho.gov/wq2014/scripts/adb2014.aspx?WBIDSEGID=ID17060209SL047\\_04](https://mapcase.deq.idaho.gov/wq2014/scripts/adb2014.aspx?WBIDSEGID=ID17060209SL047_04)

Based on the 2016 Integrated Report, Whitebird Creek is fully supporting all assessed beneficial uses.

### 2.2.2 Critical Conditions

The low flow conditions of a water body are used to determine water quality-based effluent limits (WQBELs). In general, Idaho's water quality standards (WQS) require criteria be evaluated at the low flow design conditions (See IDAPA 58.01.02.210.03) as shown in Table 9. The 1Q10 represents the lowest one day flow with an average recurrence frequency of once in 10 years. The 7Q10 represents lowest average 7 consecutive day flow with an average recurrence frequency of once in 10 years. The 30Q5 represents the lowest average 30 consecutive day flow with an average recurrence frequency of once in 5 years. Due to lack of upstream flow data, USGS StreamStats was used to provide a best estimate of critical flows. During the next permit cycle the City will be required to monitor flows upstream of the facility to provide data. Reliable receiving water flow data will be required for the consideration of a mixing zone in future permits.

**Table 9. Low flow design conditions.**

Criteria	Flow Condition	Critical Flow (cfs)
Acute aquatic life	1Q10	3.4
Chronic aquatic life	7Q10	4.13
Non-carcinogenic human health criteria	30Q5	6.45

## 2.3 Pollutants of Concern

DEQ may identify pollutants of concern (POC) for the discharge based on, but not limited to, those which:

- Have a technology-based effluent limit (TBEL)
- Have an assigned WLA from a TMDL
- Had an effluent limit in the previous permit
- Are present in the effluent monitoring data reported in the application, DMRs, or special studies
- Are expected to be in the discharge based on the nature of the discharge; or
- Are impairing the beneficial uses of the receiving water

To determine POCs for further analysis, DEQ evaluated all pertinent and available information such as the permit application, raw discharge data provided by the facility, and the industrial user surveys. The wastewater treatment process for this facility includes both primary and secondary treatment. Pollutants expected in the discharge from a facility of this type include but are not limited to: five-day biochemical oxygen demand (BOD<sub>5</sub>), total suspended solids (TSS), *E. coli* bacteria, pH, temperature, and ammonia.

To characterize the effluent and determine POCs, DEQ evaluated all pertinent data and available information from the facility's permit application. POCs for this facility are BOD<sub>5</sub>, TSS, *E. coli*, pH, temperature, and ammonia.

### **3 Effluent Limits and Monitoring**

Table 10 presents the proposed effluent limits and monitoring requirements in the 2021 permit.

Table 10. 2021 Permit – Outfall 001 effluent limits and monitoring requirements.

Parameter	Units	Effluent Limits						Monitoring Requirements		Reporting Frequency (DMR Months)
		Average Monthly	Monthly Geometric Mean	Average Weekly	Maximum Daily	Average Daily Maximum	Instantaneous Maximum	Sample Type	Sample Frequency	
Flow	mgd	Report	—	—	—	—	—	Recorded	Continuous	Monthly Reporting
Biochemical Oxygen Demand (BOD <sub>5</sub> )	mg/L	30	—	45	—	—	—	8-hour composite	2/month (Influent & Effluent)	Monthly Reporting
	lb/day	7.5	—	11.3	—	—	—	Calculation <sup>a,b</sup>		
BOD <sub>5</sub> Percent Removal	%	85 (minimum)	—	—	—	—	—	Calculation <sup>b</sup>	—	
Total Suspended Solids (TSS)	mg/L	30	—	45	—	—	—	8-hour composite	2/month (Influent & Effluent)	Monthly Reporting
	lb/day	7.5	—	11.3	—	—	—	Calculation <sup>a,b</sup>		
TSS Percent Removal	%	85 (minimum)	—	—	—	—	—	Calculation <sup>b</sup>	—	
<i>E. coli</i> <sup>c</sup>	#/100 ml	—	126 <sup>d</sup>	—	— <sup>e</sup>	—	—	Grab <sup>f</sup>	5/month	Monthly Reporting
pH	std. units	Between 6.5–9.0						Grab	2/week	Monthly Reporting
Temperature	°C	Report	—	—	—	—	Report	Grab	2/week	Monthly Reporting
Total Ammonia (as N)	mg/L	Report	—	—	Report	—	—	8-hour composite	1/month	Monthly Reporting

- Loading (lb/day) is calculated by multiplying the concentration (mg/L) by the corresponding flow (mgd) for the day of sampling by a conversion factor of 8.34. For more information on calculating, averaging, and reporting loads and concentrations see the NPDES Self-Monitoring System User Guide (EPA 833-B-85-100, March 1985).
- Calculation means figured concurrently with the respective sample, using the following formula: Concentration (in mg/L) X Flow (in MGD) X Conversion Factor (8.34) = lb/day
- Exceedance of a maximum daily limit, instantaneous maximum limit, or instantaneous minimum limit, for this parameter requires 24-hour reporting in accordance with 2.2.7 of the permit. For *E. coli*, the maximum daily threshold that triggers 24-hour reporting is 406 organisms/100 mL. Please see section 2.2.7 of the permit for additional 24-hour reporting requirements.
- Geometric mean of five or more samples collected 3-7 days apart over a calendar month.

- e. Idaho's water quality standards for primary contact recreation include a single sample value of 406 organisms/100 mL. Exceedance of this value indicates likely exceedance of the 126 organisms/100 mL average monthly effluent limit; however, it is not an enforceable limit for a daily value, nor is exceeding this value a violation of water quality standards. If this value is exceeded at any point within the month, the facility should consider collecting more than the 5 samples per month required in this permit to determine compliance with the monthly geometric mean according to IDAPA 58.01.02.251.01.a.
- f. A grab sample is an individual sample collected over a 15-minute period or less.



### 3.1 Basis for effluent limits

Regulations require that effluent limits in an IPDES permit must be either technology-based or water quality-based.

TBELs are set according to the level of treatment that is achievable using available technology. TBELs are based upon the treatment processes used to reduce specific pollutants. TBELs are set by the EPA and published as a regulation. DEQ may develop a TBEL on a case-by-case basis (40 CFR 125.3, IDAPA 58.01.25.302, and IDAPA 58.01.25.303).

WQBELs are calculated so the effluent will comply with the surface Water Quality Standards (IDAPA 58.01.02) or the National Toxics Rule (40 CFR 131.36) applicable to the receiving water. DEQ must apply the most stringent of these limits to each POC. These limits are described below.

The City is currently obligated by a Consent Decree (Case No. 3:14-cv-00173-REB, Docket No. 24) to “construct Permanent Improvements to the wastewater system.” To this end the City submitted for approval *Phase 1 Preliminary Engineering Report – Amendment (PER)* dated January 26, 2018 in which is outlined the design and operational capabilities of the proposed POTW. The DEQ reviewed and approved the plans on January 26, 2018. The City has procured necessary funding and completed construction. All permit limits have been developed based on the new facility’s design capabilities and recent data.

### 3.2 Technology-Based Effluent Limits

IDAPA 58.01.25.302 requires that IPDES permits include applicable TBELs and standards, while 40 CFR 125.3(a)(1) states that TBELs for POTWs must be based on secondary treatment standards or as specified in 40 CFR 133. The following section explains secondary treatment effluent limits for the conventional pollutants discharged by POTWs: BOD<sub>5</sub>, TSS, and pH. These effluent limits are given in 40 CFR Part 133 and are outlined in Table 11.

**Table 11. Secondary treatment effluent limits.**

Parameter	30-day average	7-day average
BOD <sub>5</sub>	30 mg/L	45 mg/L
cBOD <sub>5</sub>	25 mg/L	40 mg/L
TSS	30 mg/L	45 mg/L
Removal for BOD <sub>5</sub> and TSS (concentration)	85% (minimum)	---
pH	within the limits of 6.0 - 9.0 s.u.	

In addition, Idaho rules and federal regulations include special considerations to allow treatment equivalent to secondary (TES) for treatment facilities with waste stabilization ponds (lagoons) and trickling filters. These provisions allow alternative limits for BOD<sub>5</sub> and TSS for such facilities provided the following requirements are met (40 CFR 133.101(g) and 40 CFR

133.105(d)). This facility does not require TES as recent data has shown that the facility is capable of secondary treatment standards.

The City's new facility is designed to meet secondary treatment standards and recent data reflects this. This 2021 permit will apply secondary treatment standards as the final effluent limits.

### 3.2.1 Mass-Based Limits

IDAPA 58.01.25.303.06 requires that effluent limits be expressed in terms of mass, except under certain conditions. The regulation at IDAPA 58.01.25.303.02.a requires that effluent limits for POTWs be calculated based on the design flow of the facility. The mass-based limits are expressed in pounds per day and are calculated as follows:

$$\text{Mass based limit (lb/day)} = \text{concentration limit (mg/l)} \times \text{design flow (mgd)} \times 8.34^{ii}$$

Since the design flow for this facility is 0.03 mgd, the technology based mass limits for:

BOD<sub>5</sub>:

$$\text{Average Monthly Limit} = 30 \text{ mg/l} \times 0.03 \text{ mgd} \times 8.34 = 7.5 \text{ lbs/day}$$

$$\text{Average Weekly Limit} = 45 \text{ mg/l} \times 0.03 \text{ mgd} \times 8.34 = 11.3 \text{ lbs/day}$$

TSS:

$$\text{Average Monthly Limit} = 30 \text{ mg/l} \times 0.03 \text{ mgd} \times 8.34 = 7.5 \text{ lbs/day}$$

$$\text{Average Weekly Limit} = 45 \text{ mg/l} \times 0.03 \text{ mgd} \times 8.34 = 11.3 \text{ lbs/day}$$

## 3.3 Water Quality-Based Effluent Limits

### 3.3.1 Statutory and Regulatory Basis

Section 301(b)(1)(C) of the Clean Water Act (CWA) requires the development of limits in permits necessary to meet WQS. The IPDES regulation IDAPA 58.01.25.302.06 implementing Section 301(b)(1)(C) of the CWA requires that permits include limits for all pollutants or parameters that are or may be discharged at a level that will cause, have the reasonable potential to cause, or contribute to an excursion above any WQS including narrative criteria for water quality. Effluent limits must also meet the applicable water quality requirements of affected States other than the State in which the discharge originates, which may include downstream States (IDAPA 58.01.25.103.03, IDAPA 58.01.25.302.06).

The regulations require the permitting authority to make this evaluation using procedures that account for existing controls on point and non-point sources of pollution, the variability of the pollutant in the effluent, species sensitivity (for toxicity), and where appropriate, dilution in the receiving water. The limits must be stringent enough to ensure that WQS are met and must be

<sup>ii</sup> 8.34 is a conversion factor with units (lb × L)/(mg × gallon × 10<sup>6</sup>)

consistent with any available TMDL WLA for the discharge. If there are no approved TMDLs that specify WLAs for this discharge, all of the WQBELs are calculated directly from the applicable WQS.

### **3.3.2 Reasonable Potential Analysis (RPA) and Need for Water Quality-Based Effluent Limits**

DEQ uses the process described in the *Effluent Limit Development Guidance* (DEQ 2017) to determine reasonable potential. To determine if there is reasonable potential for the discharge to cause or contribute to an exceedance of water quality criteria (WQC) for a given pollutant, DEQ compares the maximum projected receiving water concentration to the WQC for that pollutant. If the projected receiving water concentration exceeds the criteria, there is reasonable potential, and a WQBEL must be included in the permit.

In some cases, a dilution allowance or mixing zone is permitted. A mixing zone is a limited area or volume of water where initial dilution of a discharge takes place and within which certain water quality criteria may be exceeded (IDAPA 58.01.02.060). While the criteria may be exceeded within the mixing zone, the use and size of the mixing zone must be limited such that the water body as a whole will not be impaired, all designated uses are maintained, and acutely toxic conditions are prevented.

Because this facility is utilizing an infiltration gallery as an outfall and no flow data is available for Whitebird Creek, the DEQ will not authorize any mixing zones at this time.

The equations used to conduct the RPA and calculate the WQBELs are provided in Appendix B.

### **3.3.3 Reasonable Potential and Water Quality-Based Effluent Limits**

The reasonable potential and WQBELs for specific parameters are summarized below. The calculations are provided in Appendix B.

#### **3.3.3.1 Ammonia**

Ammonia criteria are based on a formula that relies on the pH and temperature of the receiving water. Because the fraction of ammonia present as the toxic, un-ionized form increases with increasing pH and temperature, the criteria become more stringent as pH and temperature increase. The figure below details the equations used to determine WQC for ammonia. Because of the lack of data for this system the supporting data used represents the most conservative data available.

Figure 1. Ammonia Criteria

Total ammonia nitrogen criteria (mg N/L): Annual Basis Based on IDAPA 58.01.02			
INPUT		Acute Criteria Equation: Cold Water	
1. Receiving Water Temperature (deg C):	20.8	$CMC = \frac{0.275}{1 + 10^{7.204 - pH}} + \frac{39.0}{1 + 10^{pH - 7.204}}$	
2. Receiving Water pH:	8.30	Acute Criteria Equation: Warm Water	
3. Is the receiving water a cold water designated use?	Yes	$CMC = \frac{0.411}{1 + 10^{7.204 - pH}} + \frac{58.4}{1 + 10^{pH - 7.204}}$	
4. Are non-salmonid early life stages present or absent?	Present		
OUTPUT			
Total ammonia nitrogen criteria (mg N/L):		Chronic Criteria: Cold Water, Early Life Stages Present	
Acute Criterion (CMC)	3.15	$CCC = \left( \frac{0.0577}{1 + 10^{7.088 - pH}} + \frac{2.487}{1 + 10^{pH - 7.088}} \right) \cdot MIN(2.85, 1.45 \cdot 10^{0.028(25 - T)})$	
Chronic Criterion (CCC)	1.02	Chronic Criteria: Cold Water, Early Life Stages Absent	
		$CCC = \left( \frac{0.0577}{1 + 10^{7.088 - pH}} + \frac{2.487}{1 + 10^{pH - 7.088}} \right) \cdot 1.45 \cdot 10^{0.028(25 - T)}$	

Because this facility has no prior permit, sufficient effluent data is not available to perform a reasonable potential analysis. During this permit cycle the City will be required to monitor for ammonia.

### 3.3.3.2 *E. coli*

The Idaho WQS states that waters of the State of Idaho that are designated for recreation (primary or secondary) are not to contain *E. coli* bacteria in concentrations exceeding a geometric mean of 126 organisms per 100 ml based on a minimum of five samples taken every three to seven days over a 30-day period. A mixing zone is not appropriate for bacteria for waters designated for contact recreation. Therefore, the draft permit contains a monthly geometric mean effluent limit for *E. coli* of 126 organisms per 100 ml (IDAPA 58.01.02.251.01.a.).

The Idaho WQS also state that a water sample that exceeds certain single sample maximum values indicates a likely exceedance of the geometric mean criterion, although it is not, by itself, a violation of WQS. For waters designated for primary contact recreation, the single sample value is 406 organisms per 100 mL (IDAPA 58.01.02.251.01.b.ii.). When a single sample value is exceeded, additional samples should be taken to assess compliance with the geometric mean criterion.

Monitoring of the effluent five times per month will ensure compliance with the criterion can be assessed. If the single sample maximum is exceeded, the permittee may choose to monitor more frequently than the permit requires, ensuring adequate disinfection and compliance with permit effluent limits exists.

Regulations at IDAPA 58.01.25.303.04 require that effluent limits for continuous discharges from POTWs be expressed as average monthly and average weekly limits, unless impracticable. Additionally, the terms “average monthly limit” and “average weekly limit” are defined in IDAPA 58.01.25.010.06 and 07 respectively as being arithmetic (as opposed to geometric) averages. It is impracticable to properly implement a 30-day geometric mean criterion in a permit using monthly and weekly arithmetic average limits. The geometric mean of a given data set is equal to the arithmetic mean of that data set if and only if all of the values in that data set are equal. Otherwise, the geometric mean is always less than the arithmetic mean. Therefore, the permit monthly effluent limit is a geometric mean for *E. coli* of 126 organisms per 100 ml.

### **3.3.3.3 pH**

The Idaho WQS at IDAPA 58.01.02.250.01.a require pH values of the receiving water to be within the range of 6.5 to 9.0. Mixing zones are generally not granted for pH; therefore the most stringent WQC must be met before the effluent is discharged to the receiving water.

### **3.3.3.4 Temperature**

Effluent temperature is a parameter that is unique to this facility and its use of an infiltration gallery. Infiltration through the soil column is an effective heat sink, and is a commonly used best management practice (BMP) for thermal control of storm water. DEQ believes that measuring effluent temperature discharged to the infiltration gallery is insufficiently useful by itself in assessing thermal impact of the surface water. By the time the discharge has an opportunity to impact beneficial uses of surface water any potential thermal pollution will be thoroughly diminished in the subsurface flow. With this in mind the 2021 permit includes temperature monitoring of the receiving water both upstream and downstream to confirm if the discharge is having a thermal impact on Whitebird Creek, in addition to regular monitoring of effluent temperature after disinfection and before discharge.

## **3.4 Narrative Criteria**

DEQ must incorporate the narrative criteria described in IDAPA 58.01.02.200 when it determines permit limits and conditions. Narrative WQC limit the toxic, radioactive, or other deleterious material concentrations that the facility may discharge which have the potential to adversely affect designated uses, cause acute or chronic toxicity to biota, impair aesthetic attributes, or adversely affect human health.

The Idaho WQS require that surface waters of the State be free from floating, suspended, or submerged matter of any kind in concentrations impairing designated beneficial uses. The permit contains a narrative limitation prohibiting the discharge of such materials or any violations of narrative WQC.

## **3.5 Antidegradation**

DEQ's antidegradation policy provides three levels of protection to water bodies in Idaho subject to Clean Water Act (CWA) jurisdiction (IDAPA 58.01.02.051).

- Tier I of antidegradation protection is designed to ensure that existing uses and the water quality necessary to protect those uses is maintained and protected (IDAPA 58.01.02.051.01; 58.01.02.052.01). A Tier I review is performed for all new or reissued permits or licenses (IDAPA 58.01.02.052.07).
- Tier II protection applies to any water bodies considered to be high quality waters (where the water quality exceeds levels necessary to support propagation of fish, shellfish, wildlife, and recreation in and on the water) and provides that water quality will be maintained and protected unless allowing for lower water quality is deemed by the state as necessary to accommodate important economic or social development in the area. In allowing any lowering of water quality DEQ must ensure adequate water quality to protect existing uses fully and must assure that there will be achieved the highest

statutory and regulatory requirements for all new and existing point sources (IDAPA 58.01.02.051.02; 58.01.02.052.08).

- Tier III protection applies to water bodies that have been designated by the Idaho Legislature as outstanding national resource waters and provides that water quality is to be maintained and protected (IDAPA 58.01.02.051.03; 58.01.02.052.09).

DEQ employs a water body by water body approach to implementing Idaho's antidegradation policy. This approach means that any water body fully supporting its beneficial uses will be considered high quality (IDAPA 58.01.02.052.05.a). Any water body not fully supporting its beneficial uses will be provided Tier I protection for that use unless specific circumstances warranting Tier II protection are met (IDAPA 58.01.02.052.05.c). The most recent federally approved Integrated Report and supporting data are used to determine support status and the tier of protection (IDAPA 58.01.02.052.05).

### **3.5.1 Protection and Maintenance of Existing Uses (Tier I Protection)**

A Tier I review is performed for all new or reissued permits or licenses, applies to all waters subject to the jurisdiction of the Clean Water Act, and requires demonstration that existing uses and the level of water quality necessary to protect existing uses shall be maintained and protected. In order to protect and maintain existing and designated beneficial uses, a permitted discharge must comply with narrative and numeric criteria of the Idaho WQS, as well as other provisions of the WQS.

Water bodies not supporting existing or designated beneficial uses must be identified as water quality-limited, and a TMDL must be prepared for those pollutants causing impairment. A central purpose of TMDLs is to establish wasteload allocations for point source discharges, which are set at levels designed to help restore the water body to a condition that supports existing and designated beneficial uses. Discharge permits must contain limits that are consistent with wasteload allocations in the approved TMDL.

Prior to the development of the TMDL, the WQS require the application of the antidegradation policy and implementation provisions to maintain and protect uses (IDAPA 58.01.02.055.04).

The effluent limits and associated requirements contained in the 2021 permit are set at levels that ensure compliance with the narrative and numeric criteria in the WQS. Therefore, DEQ has determined the permit will protect and maintain existing and designated beneficial uses in the Whitebird Creek in compliance with the Tier I provisions of Idaho's WQS (IDAPA 58.01.02.051.01 and 58.01.02.052.07).

### **3.5.2 High-Quality Waters (Tier II Protection)**

Whitebird Creek is considered high quality for primary contact recreation and cold water aquatic life. As such, the water quality for Whitebird Creek must be maintained and protected, unless a lowering of water quality is deemed necessary to accommodate important social or economic development.

To determine whether degradation will occur, DEQ must evaluate how the discharge will affect water quality for each pollutant that is relevant to the primary contact recreation and cold water

aquatic uses of Whitebird Creek (IDAPA 58.01.02.52.05). The parameters of concern will be *E. coli*, BOD, TSS, pH, Temperature, and Ammonia.

Idaho water quality standards define degradation as follows: (IDAPA 58.01.02.010.20)

***Degradation or Lower Water Quality.** “Degradation” or “lower water quality” means, for purposes of antidegradation review, a change in a pollutant that is adverse to designated or existing uses, as calculated for a new point source, and based upon monitoring or calculated information for an existing point source increasing its discharge. Such degradation shall be calculated or measured after appropriate mixing of the discharge and receiving water body*

Additionally the rules explain how to evaluate degradation: (IDAPA 58.01.02.052.06)

***Evaluation of Effect of an Activity or Discharge on Water Quality.** The Department will evaluate the effect on water quality for each pollutant. The Department will determine whether an activity or discharge results in an improvement, no change, or degradation of water quality. (3-18-11)*

The City has been receiving, treating, and discharging effluent into an infiltration gallery since 1978. The POTW discharges to Whitebird Creek (AU ID17060209SL047\_04) and the new system that the 2021 permit pertains to receives the same influent, and discharges to the same infiltration gallery. However the new facility provides greater treatment capability than the previous system. Therefore, the new activity results in an improvement in downstream water quality.

To determine if the discharge potentially degrades receiving water quality it is necessary to examine each relevant parameter separately. The influent entering the new facility is unchanged from the old facility therefore; this assessment will focus solely on the treatment capabilities of each facility.

- **BOD**: Both facilities rely primarily on aerated lagoons to reduce five day BOD levels to the technology based standard of 30mg/L average monthly concentration at a minimum. The new facility increased aeration to the lagoons and lagoon two is fully utilized increasing retention time, both of which increase pollutant treatment potential. 2018 data shows that the old facility did not consistently meet the BOD limits proposed in the 2021 permit (see 2.1.6). However the new facility data reflects an average BOD effluent concentration of 3.5 mg/L. The result is an improvement in water quality.
- **TSS**: The new facility utilizes an upgraded sand filter that allows effluent to be sampled after filtration greatly enhancing the facility’s ability to meet required limits. The sand filter has been rebuilt and increased sand depth increases TSS filtration capability. 2018 data shows that the old facility did not consistently meet the TSS limits proposed in 2021 permit (see 2.1.6). However the new facility data reflects an average TSS effluent concentration of 4.3 mg/L. The result is an improvement in water quality.
- **E. coli**: The old facility was designed with chlorine disinfection, but at some point it was removed due to lack of dechlorination ability. The new system employs a UV disinfection system after the sand filter before discharge into the infiltration gallery. This upgrade greatly reduces the potential of water quality impacts of fecal bacteria

contamination. The 2018 data revealed all five sampling events had *E. coli* counts of >2,400 per 100 mL. However the new facility data reflects an average *E. coli* effluent concentration of 0.7 #/100mL. The result is an improvement in water quality.

- **pH:** Both facilities are capable of producing effluent within the acceptable pH range that will meet water quality based criteria for pH. The result is no change in water quality.
- **Temperature:** The old treatment system transferred effluent from the lagoons into the sand filter which was also the discharge point as it connected to the infiltration gallery. The new system differs in that the sand filter depth has increased and the effluent is collected after the sand filter, undergoes UV treatment, and is then discharged into infiltration gallery. Thermal degradation in the sand filter can be accounted for in the proposed system and additional thermal treatment can be assumed in the infiltration gallery before impacting receiving water. Overall, thermal degradation from the new system is expected to be less than that of the old system. Temperature monitoring upstream and downstream of the facility is required in the 2021 permit. The result is an improvement or no change in water quality.
- **Ammonia and Nutrients:** The increased aeration capability of the new system is reasonably believed to increase ammonia treatment. While neither system is designed to specifically remove nitrogen or phosphorus, there is no reason to believe that the new system does not provide at least as much treatment as the old facility. Increased sand filtration capability is reasonably believed to better remove phosphorus. Phosphorus monitoring has been included in the 2021 permit. The result is an improvement or no change in water quality.

Idaho rules (IDAPA 58.02.052.08) states that only those discharges to high quality waters that cause degradation will require a Tier II analysis. Because this upgraded facility improves (or at least matches) effluent quality for all relevant parameters, it is therefore a non-degrading discharge.

### 3.6 Antibacksliding

Section 402(o) of the CWA and regulations at IDAPA 58.01.25.200 generally prohibit the renewal, reissuance, or modification of an existing IPDES permit that contains effluent limits, permit conditions, or standards that are less stringent than those established in the existing permit (i.e., antibacksliding) but provides limited exceptions. For explanation of the antibacksliding exceptions refer to section 4.1 of the Effluent Limit Development Guidance (DEQ 2017).

The City does not have a previous permit; therefore, antibacksliding does not apply.

## 4 Monitoring Requirements

Idaho regulations IDAPA 58.01.02 and 58.01.25 require that monitoring be included in permits to determine compliance with effluent limits and other permit restrictions. Monitoring may also be required to gather data to assess the need for future effluent limitations or to monitor effluent



impacts on receiving water quality. Permittees are responsible for conducting the monitoring and reporting the results on monthly DMRs and in annual reports.

## 4.1 Influent Monitoring

Flow, TSS and BOD influent monitoring requirements are listed below in Table 12. Permittees have the option of taking more frequent samples than are required under the permit. These samples must be used for averaging if they are conducted using the EPA-approved test methods (generally found in 40 CFR 136) or as specified in the permit.

**Table 12. Influent monitoring requirements.**

Parameter	Units	Sample Frequency	Sample Type	Report	Reporting Frequency (DMR Months)
Flow	mgd	Continuous	Recorded	Average Monthly, Average Daily Maximum	Monthly
BOD <sub>5</sub>	mg/L	2/month	8-Hour Composite	Average Monthly	Monthly
TSS	mg/L	2/month	8-Hour Composite	Average Monthly	Monthly

## 4.2 Effluent Monitoring

Monitoring frequencies are based on the nature and effect of the pollutant, as well as a determination of the minimum sampling necessary to adequately monitor the facility's performance. Permittees have the option of taking more frequent samples than are required under the permit. These samples must be used for averaging if they are conducted using the EPA-approved test methods (generally found in 40 CFR 136) or as specified in the permit.

Table 13 presents the effluent monitoring requirements in the 2021 permit. The sampling location must be after the last treatment unit and prior to discharge to the receiving water. The samples must be representative of the volume and nature of the monitored discharge. If no discharge occurs during the reporting period, "no discharge" shall be reported on the DMR using NODI code "C".

Table 13. Effluent monitoring requirements.

Parameter	Units	Minimum Frequency	Sample Type	Report	Reporting Frequency (DMR Months)
<b>Parameters with effluent limits</b>					
BOD <sub>5</sub>	mg/L	2/month	8-hr composite	Monthly Average, Weekly Average, % Removal	Monthly
	lbs/day	2/month	Calculated <sup>a</sup>		
	% Removal	1/month	Calculated <sup>b</sup>		
TSS	mg/L	2/month	8-hr composite	Monthly Average, Weekly Average, % Removal	Monthly
	lbs/day	2/month	Calculated <sup>a</sup>		
	% Removal	1/month	Calculated <sup>b</sup>		
pH	Standard Units	2/week	Grab	Minimum Daily, Maximum Daily	Monthly
<i>E. coli</i>	#/100 mL	5/month <sup>c</sup>	Grab	Monthly Geometric Mean	Monthly
<b>Parameters without effluent limits</b>					
Flow	mgd	Continuous	Recorded	Monthly Average, Average Daily Maximum	Monthly
Temperature	°C	2/week	Grab	Monthly Average / Instantaneous Maximum	Monthly
Total Ammonia (as N)	mg/L	1/month	8-hr composite	Monthly Average	Monthly
Total Phosphorus (as P)	mg/L	1/quarter	8-hr composite	Monthly Average	Monthly

- Loading rates (lbs/day) are calculated by multiplying the effluent concentration (mg/L) by the effluent flow (mgd) for the day of sampling and a conversion factor (8.43). For more information see Equation 1 in the ELDG.
- Percent Removal = (average monthly influent concentration – average monthly effluent concentration) ÷ average monthly influent concentration x 100. Influent and effluent samples must be taken over approximately the same time period.
- This frequency complies with State of Idaho Water Quality Standards for *E. coli* (e.g. minimum of 5 samples taken every 3 to 7 days over a 30-day period).

### 4.3 Receiving Water Monitoring

Table 14 presents the receiving water monitoring requirements for the 2021 permit. The City must establish receiving water monitoring at the identified locations. Receiving water monitoring results must be submitted with the DMR.

**Table 14. Receiving water monitoring requirements.**

Parameter	Units	location	Frequency	Report	Sample Type	Report
Flow	cfs	Upstream	Once every 2 weeks	Maximum daily average	measured	monthly
pH	Standard units	Upstream	Once every 2 weeks	Instantaneous Maximum and minimum value	grab	monthly
Temperature	°C	Upstream, Downstream	Once every 2 weeks	Instantaneous maximum, and monthly average	grab	monthly
Total Ammonia (as N)	mg/L	Upstream	1/quarter	Quarterly Average	grab	Quarterly <sup>a</sup>

a. For quarterly monitoring frequency, quarters are defined as: January 1 to March 31; April 1 to June 30; July 1 to September 30; and, October 1 to December 31.

### 4.4 Permit Renewal Monitoring

The permit renewal monitoring requires data collected to characterize the effect of the effluent on Whitebird Creek. At a minimum, three samples of the final wastewater effluent for the parameters listed in Table 15 are required so that DEQ can assess the surface water impacts.

**Table 15. Effluent monitoring required for all permit renewals.**

Parameter	Units	Sample Type	Report
pH	s.u.	Grab	Minimum and maximum value
Flow	mgd	Continuous	Maximum daily value, average daily value, number of samples
Temperature	°C	Grab	
BOD <sub>5</sub>	mg/L	24-hour composite	Maximum daily value, average daily value, analytical method and ML or MDL
TSS	mg/L	24-hour composite	
<i>E. Coli</i>	#/100 mL	Grab	

## **5 Special Conditions**

### **5.1 Nondomestic Waste Management**

The permittee has nonsignificant, nondomestic (industrial/commercial) users, which are neither subject to the pretreatment standards in 40 CFR 405 through 471, nor meet any of the criteria of a significant industrial user (SIU) as specified in 40 CFR 403.3(v), and therefore, DEQ does not require an authorized pretreatment program. The permittee must ensure, through a sewer use ordinance, that pollutants from nondomestic wastes discharged to their system do not negatively impact system operation or pass through the wastewater treatment facility. The permittee must not authorize indirect discharges of pollutants that would inhibit, interfere with, or otherwise be incompatible with operation of the wastewater treatment works, including interference with the use or disposal of municipal sludge.

### **5.2 Spill Control Plan**

The permittee shall develop and implement a plan for possible spills of all stored chemicals.

### **5.3 Inflow and Infiltration Evaluation**

The permittee must submit to DEQ through the IPDES E-Permitting System an inflow and infiltration (I&I) evaluation as described in section 3.4 of the 2021 permit.

## **6 Standard Conditions**

Section 4 of the permit contains standard regulatory language that must be included in all IPDES permits. DEQ bases the Standard Conditions on state and federal law and regulations. The standard regulatory language covers requirements such as monitoring, recording, and reporting requirements, compliance responsibilities, and other general requirements.

### **6.1 Quality Assurance Project Plan**

In accordance with IDAPA 58.01.25.300.05, permittees are required to develop procedures to ensure that the monitoring data submitted is accurate and explain data anomalies if they occur. The permittee is required to develop, maintain, and implement a plan for facility data gathering. The quality assurance project plan (QAPP) shall consist of standard operating procedures for collecting, handling, storing and shipping samples, laboratory analysis, and data reporting. The plan shall be retained on site and made available to DEQ upon request.

### **6.2 Operation and Maintenance Manual**

The permit requires the White Bird POTW to properly operate and maintain all facilities and systems of conveyance, treatment, and control. Proper operation and maintenance (O&M) is essential to meeting discharge limits, monitoring requirements, and all other permit requirements

at all times. The plan must be retained on site and made available to DEQ upon request.

### **6.3 Emergency Response Plan**

The permittee must develop and implement an emergency response plan that identifies measures to protect public health and the environment. At a minimum, the plan must include mechanisms for the following:

1. Ensure that the permittee is aware (to the greatest extent possible) of all overflows from portions of the collection system over which the permittee has ownership or operational control as well as any unanticipated treatment unit bypass or upset that may exceed any effluent limit in the permit.
2. Ensure that reports of an overflow or of an unanticipated bypass or upset that may exceed any effluent limit in this permit are immediately dispatched to appropriate personnel for investigation and response as required in section 4.1.3 of the permit.
3. Ensure immediate notification to DEQ of any noncompliance that may endanger public health or the environment and identify the public health district and other officials who will receive immediate notification for items that require 24-hour reporting in section 2.2.7 of the draft permit.
4. Ensure that appropriate personnel understand, are appropriately trained on, and follow the Emergency Response Plan; and
5. Provide emergency facility operation.

## **7 Compliance with other DEQ Rules**

### **7.1 Operator's License**

The permittee must meet the requirements and operator license levels listed in the wastewater rules at IDAPA 58.01.16.203 for the type(s) of operations at the facility.

### **7.2 Lagoon Seepage Testing**

The permittee must comply with the Wastewater Rules in IDAPA 58.01.16, including the seepage testing requirements in IDAPA 58.01.16.493 for municipal lagoons. Prior to lagoon seepage testing, the permittee must consult DEQ. The seepage test report submittals to DEQ must be up-to-date per the IDAPA 58.01.16 timelines.

### **7.3 Sludge/Biosolids**

DEQ separates wastewater and sludge permitting for the purposes of regulating biosolids. DEQ may issue a sludge-only permit to each facility at a later date, as appropriate.

Until future issuance of a sludge-only permit, sludge management and disposal activities at each facility continue to be subject to the national sewage sludge standards at 40 CFR 503 and the requirements of Idaho's Wastewater Rules (IDAPA 58.01.16.480 and 650). The 503 regulations

are self-implementing, and facilities must comply with them whether or not a permit has been issued. Idaho's Wastewater Rules require a POTW to have the capability to process sludge accumulated on site in preparation for final disposal or reuse (IDAPA 58.01.16.650). Operations of these sludge processing, storage, and disposal activities must comply with the facility's sludge management plan.

## 8 Permit Expiration or Modification

The permit will expire five years from the effective date

DEQ may modify a permit before its expiration date only for causes specified in IDAPA58.01.25.201. A modification other than a minor modification requires preparing a draft permit that incorporates the proposed changes, preparing a fact sheet, and conducting a public review period. Only the permit conditions subject to the modification will be reopened when a permit is modified. All other conditions of the existing permit remain in effect. Modifying a permit does not change the expiration date of the original permit.

## 9 References for Text and Appendices

- DEQ. (Idaho Department of Environmental Quality). 2016. *Public Participation in the Permitting Process*. Boise, ID: DEQ.  
<https://www2.deq.idaho.gov/admin/LEIA/api/document/download/4814>
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- EPA (US Environmental Protection Agency). 2007. *EPA Model Pretreatment Ordinance*. Washington, DC: Environmental Protection Agency Office of Wastewater Management/Permits Division, EPA-833/B-06-002.
- EPA (US Environmental Protection Agency). 2010. *NPDES Permit Writers' Manual*.

Washington, DC: Environmental Protection Agency, Office of Wastewater Management,  
EPA-833/K-10-001.

**KEY NOTES:**

1. EFFLUENT LIFT STATION AND SANITARY SEWER TREATMENT PLANT ARE SHOWN FOR THE PROPOSED PLANT. SEE SHEET 130 FOR THE SEWERAGE LAYOUT AND SEE SHEET 131 FOR THE PROPOSED PLANT.
2. LAGOON CELL NO. 1 - CONTRACTOR TO INSTALL NEW LINES.
3. LAGOON CELL NO. 2A - CONTRACTOR TO INSTALL NEW LINES.
4. LAGOON CELL NO. 2B - CONTRACTOR TO INSTALL NEW LINES.
5. PROPOSED LAYOUT OF PUMP STATION TREATMENT PLANT.
6. EXISTING SAND PUMP NO. 1 - SEE SHEET 131.
7. EXISTING SAND PUMP NO. 2 - SEE SHEET 131.
8. CONCRETE EXISTING WALL.
9. CONCRETE BUILDING.
10. EXISTING SANDPUMP/GENERATOR STRUCTURE - SEE SHEET 131/132.
11. PROPOSED EFFLUENT FLOW METER - SEE SHEET 131.
12. EXISTING INLET WALL - SEE TYPICAL DETAILS.
13. EXISTING LIFT STATION AND SAND PUMP - SEE TYPICAL DETAILS.
14. SANITARY SEWER SYSTEM - SEE SHEET 131.
15. SANITARY BUILDING - SEE SHEET 131.
16. PLANT WATER LINE - TO BE INSTALLED BY CONTRACTOR.
17. ELECTRICAL TO EFFLUENT LIFT STATION AND EFFLUENT FLOW METER.
18. EXISTING EXHAUSTION AND EXHAUSTION PUMP.
19. EXISTING BUILDING ELECTRICAL.
20. PROPOSED LAGOON COVER SHALE IN LAGOON CELL 2B ONLY.

**GENERAL NOTES:**

1. CONTRACTOR TO FIELD VERIFY EXISTING SANITARY SEWER AND SANITARY TREATMENT PLANT. CONTRACTOR TO VERIFY EXISTING SANITARY LINES TO SANITARY TREATMENT PLANT AND SANITARY BUILDING.
2. CONTRACTOR TO VERIFY AND INSTALL PUMP, OR EQUIVALENT, SANITARY TREATMENT PLANT. CONTRACTOR TO VERIFY EXISTING SANITARY LINES.
3. CONTRACTOR TO VERIFY AND INSTALL APPROXIMATELY 2,000 SQUARE FEET OF FLOWING LAGOON UNDER FILL CELL 2B.
4. EXISTING SANITARY LINE ONLY. EXISTING SANITARY LINES TO SANITARY TREATMENT PLANT AND SANITARY BUILDING. EXISTING SANITARY LINES TO SANITARY TREATMENT PLANT AND SANITARY BUILDING.
5. CONTRACTOR SHALL VERIFY AND INSTALL ALL PROPOSED SANITARY LINES.

**LEGEND:**

- EXISTING
- NEW

**PROPOSED SITE AND YARD PIPING PLAN**

**2017 WASTEWATER SYSTEM IMPROVEMENT PROJECT**  
WHITE BIRD, IDAHO

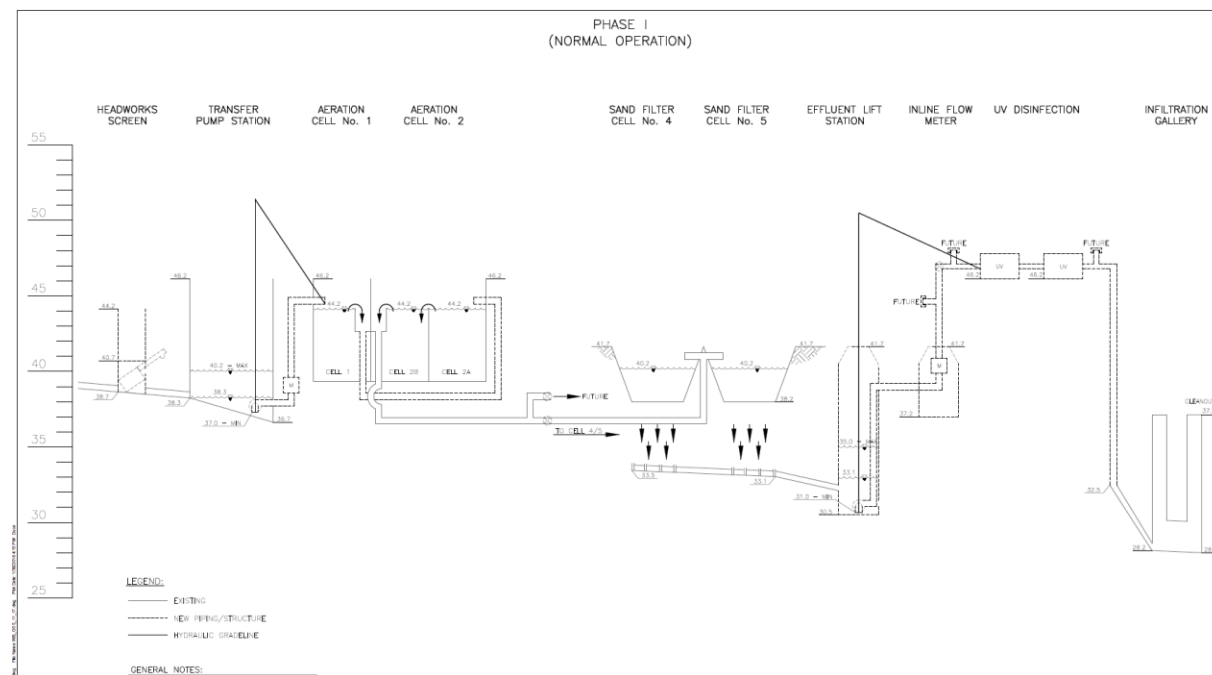
**ENGINEERING AND ENVIRONMENTAL SOLUTIONS**  
1101 W. RIVER ST., SUITE 130  
BOISE, IDAHO 83702  
208.780.3990

**Mountain WATERWORKS**

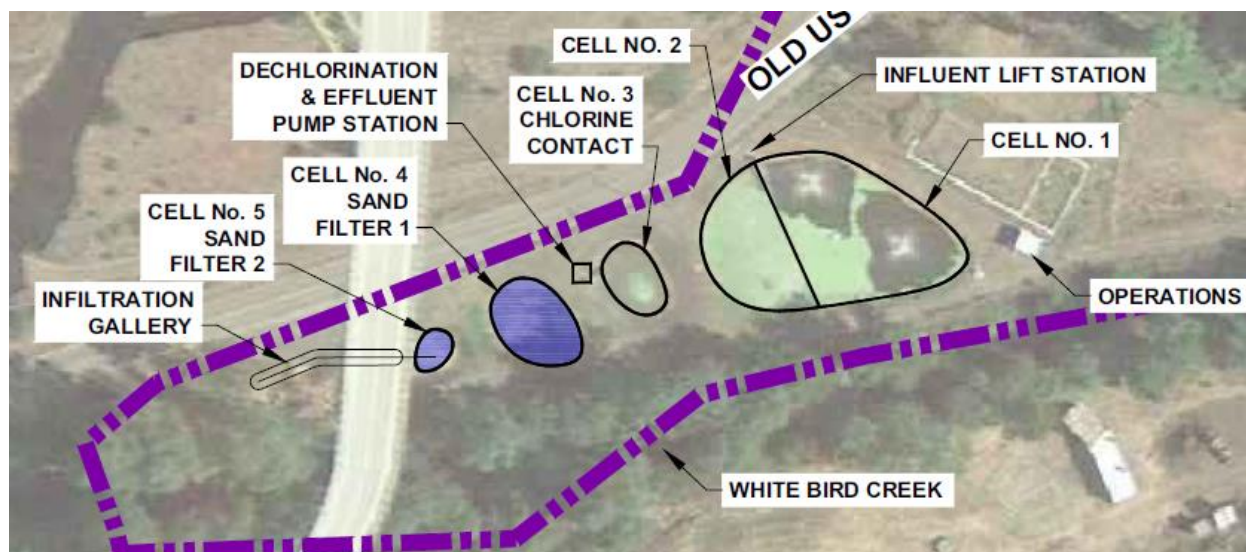
**BOISE OFFICES**  
BOISE, IDAHO  
BOISE, IDAHO  
BOISE, IDAHO

**REVISIONS:**

NO.	REVISION	BY	DATE	DESIGN
1				DESIGN
2				DESIGN
3				DESIGN
4				DESIGN
5				DESIGN
6				DESIGN
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## Appendix B. Technical Calculations

The results of the technical calculations are discussed above in sections 3.2 and 3.3 of the fact sheet.

### A. Technology-Based Effluent Limits

The CWA requires POTWs to meet performance-based requirements based on available wastewater treatment technology. Section 301 of the CWA established a required performance level, referred to as secondary treatment, which all POTWs were required to meet by July 1, 1977. The EPA has developed and promulgated secondary treatment effluent limits, which are found in 40 CFR 133. These TBELs apply to all municipal wastewater treatment facilities and identify the minimum level of effluent quality attainable by application of secondary treatment in terms of BOD<sub>5</sub>, TSS, and pH.

The concentration and removal rate limits for BOD<sub>5</sub> and TSS are the technology-based effluent limits of 40 CFR 133.102. As explained below, DEQ has determined that more-stringent water quality-based effluent limits are necessary for pH, and E. coli, in order to ensure compliance with water quality standard.

### B. Reasonable Potential and Water Quality-Based Effluent Limit Calculations

DEQ uses the process in the *Effluent Limit Development Guidance* (DEQ 2017) to determine reasonable potential. To determine if there is reasonable potential for the discharge to cause or contribute to an exceedance of water quality criteria for a given pollutant, DEQ compares the critical receiving water concentration to the water quality criteria for that pollutant. If the projected receiving water concentration exceeds the criteria, there is reasonable potential. Either a water quality-based effluent limit must be included in the permit because a mixing zone cannot be granted, or DEQ may choose to provide accommodations through application of a mixing

zone. This following section discusses how the maximum projected receiving water concentration is determined

### Mass Balance

For discharges to flowing water bodies, the maximum projected receiving water concentration is determined using the following mass balance equation:

$$C_d = \frac{(C_e Q_e) + [C_u (Q_u \times \%MZ)]}{Q_e + (Q_u \times \%MZ)} \quad \text{Equation 1. Simple mass-balance equation.}$$

Where:

$C_d$ = downstream receiving water concentration	Calculated value
$Q_e$ = critical effluent flow	From discharge flow data (design flow for POTW)
$Q_u$ = critical upstream flow (1Q10 acute criterion, 7Q10 chronic, or harmonic mean)	From water quality standards
$\%MZ$ = percent of critical low flow provided by mixing zone	From mixing zone analysis
$C_u$ = critical upstream pollutant concentration (90th to 95th percentile)	From receiving water data
$C_e$ = critical effluent pollutant concentration	Calculated value using

A dilution factor (D) can be introduced to describe the allowable mixing. A dilution factor represents the ratio of the receiving water body low flow percentage (i.e., the low-flow design discharge conditions) to the effluent discharge volume and is expressed as:

$$\text{Dilution Factor} = D_f = \frac{(Q_s \times P + Q_e)}{Q_e} = \frac{(Q_s \times P)}{Q_e} + 1 \quad \text{Equation 2. Dilution factor calculation.}$$

Where: $D_f$ = Dilution factor
$Q_s$ = Receiving water low-flow condition (cfs)
$P$ = Mixing zone percentage
$Q_e$ = Effluent discharge flow (cfs)

The above equations for  $C_d$  are the forms of the mass balance equation which were used to determine reasonable potential and calculate waste load allocations.

### Critical Effluent Pollutant Concentration

When determining the projected receiving water concentration downstream of the effluent discharge, DEQ's *Effluent Limit Development Guidance* (DEQ 2017) recommends using the critical effluent pollutant concentration ( $C_e$ ) in the mass balance calculation (see equation 1). To determine the  $C_e$  DEQ has adopted EPA's statistical approach that accounts for day-to-day

variability in effluent quality by identifying the number of samples, calculating the coefficient of variation (CV) (Equation 3, below), and selecting a reasonable potential multiplying factor (RPMF) from the tables in the *Effluent Limit Development Guidance* (DEQ 2017).

$$CV = \frac{\text{Standard Deviation}}{\text{Mean}}$$

Equation 3. CV calculation.

$$C_e = MOEC \times RPMF$$

Equation 4.  $C_e$  calculation.

If the  $C_e$  exceeds water quality criteria then a reasonable potential analysis is conducted.

### Reasonable Potential Analysis

The discharge has reasonable potential to cause or contribute to an exceedance of water quality criteria, referred to as a reasonable potential to exceed (RPTE), if the critical concentration of the pollutant at the end of pipe exceeds the most stringent WQ criterion for that pollutant. This RPTE may result in end of pipe limits or may be accommodated if the receiving water has sufficient low flows to provide a mixing zone, and the pollutant of concern does not have acute toxicity attributes. Other conditions may also be applicable that may restrict the use of a mixing zone for the pollutant of concern.

### C. WQBEL Calculations

The following discussion presents the general equations used to calculate WQBELs. Because the City has not collected sufficient data to represent current facility processes no WQBEL calculations are possible. The limits in this permit reflect secondary treatment standards and predetermined WQBELs for *E.coli* and pH developed by Idaho water quality standards to protect surface water beneficial uses. The following calculation examples are included for future reference.

### Calculate the Wasteload Allocations (WLAs)

WLAs are calculated using the same mass-balance equations used to calculate the concentration of the pollutant at the mixing zone boundary in the RPA. WLAs must be calculated for both acute and chronic criteria. To calculate the WLAs,  $C_d$  is set equal to the appropriate criterion and the equation is solved for  $C_e$ . The calculated  $C_e$  is the WLA. Equation 5 is rearranged to solve for the WLA:

$$C_e = WLA_{(a \text{ or } c)} = \frac{WQC_{(a \text{ or } c)}[Q_e + (Q_u \times \%MZ)] - [C_u \times (Q_u \times \%MZ)]}{Q_e}$$

Equation 1. Simple mass-balance equation for calculating WLA for flowing water.

Where:

$WQC_{(a \text{ or } c)}$  = Pollutant water quality criterion (acute or chronic)

$Q_e$  = Critical effluent flow

Calculated Value

From discharge flow data (design flow for POTW)

$Q_u$ = Critical upstream flow (1Q10 acute criterion or 7Q10 chronic)	From water quality standards
%MZ = Percent of critical low flow provided by mixing zone	From mixing zone analysis
$C_u$ = Critical upstream pollutant concentration (90th to 95th percentile)	From receiving water data
$C_e = WLA_{(a \text{ or } c)}$ = wasteload allocation (acute or chronic)	Calculated from Equation 4

Idaho's WQC for some metals are expressed as the dissolved fraction, but the rules regulating the IPDES program (IDAPA 58.01.25.303.03) and federal regulations (40 CFR 122.45(c)) require that effluent limits be expressed as total recoverable metal unless standards have been promulgated allowing limits specified in dissolved, valent, or total forms, a case-by-case basis has been established for limits specified in dissolved, valent, or total form, or all approved analytical methods for the metal inherently measure only its dissolved form. Therefore, the permit writer should calculate a WLA in total recoverable metal that will be protective of the dissolved criterion. This is accomplished by dividing the WLA expressed as dissolved by the criteria translator. As discussed in *Guidance Document on Dynamic Modeling and Translators* (EPA 1993), the criteria translator (CT) is equal to the conversion factor when site-specific translators are not available. Conversion factors for metals criteria are listed in DEQ's Water Quality Standards (WQS) at IDAPA 58.01.02.210.02. The WQS also lists several guidance documents at IDAPA 58.01.02.210.04 that are recommended for the development of site specific translators.

The next step is to compute the acute and chronic long-term average ( $LTA_{(a \text{ or } c)}$ ) concentrations, which will be derived from the acute and chronic WLAs. This is done using the following equations from the *Effluent Limit Development Guidance* (DEQ 2017):

$$LTA_a = WLA_a \times e^{(0.5\sigma^2 - z_{99}\sigma)}$$

**Equation 2. Acute LTA for toxics.**

Where:

$LTA_a$ = Acute long-term average	Calculated value
$WLA_a$ = Acute wasteload allocation	Calculated value. See Equation 1.
$e$ = Base of natural log	Approximately 2.718
$\sigma$ = Square root of $\sigma^2$	
$\sigma^2 = \text{Ln}(CV^2 + 1)$	Ln is the natural log
$CV$ = Coefficient of variation	Calculated using field data. If 10 or less samples available, use default value of 0.6. See Equation 3
$Z_{99}$ = z score of the 99th percentile of the normal distribution	2.326

$$LTA_c = WLA_c \times e^{(0.5\sigma_n^2 - z_{99}\sigma_n)}$$

**Equation 3. Chronic LTA average for toxics.**

Where:

LTA <sub>c</sub> = Chronic long-term average	Calculated value
WLA <sub>c</sub> = Chronic wasteload allocation	Calculated value. See Equation 1.
e = Base of natural log	Approximately 2.718
σ <sub>n</sub> = Square root of σ <sub>n</sub> <sup>2</sup>	
σ <sub>n</sub> <sup>2</sup> = Ln[(CV <sup>2</sup> )/n + 1]	Ln is the natural log
CV = Coefficient of variation	Calculated using field data. If 10 or less, samples available use default value of 0.6.
Z <sub>99</sub> = z score of the 99th percentile of the normal distribution	2.326
n = Averaging period for the chronic water quality criterion (typically 4 days)	Varies

The acute and chronic LTAs are compared, and the more stringent of the two is used to calculate the maximum daily and average monthly limits.

### Derive the Maximum Daily and Average Monthly Effluent Limits

Using the *Effluent Limit Development Guidance* (DEQ 2017) equations, the maximum daily limit (MDL) and average monthly limit (AML) are calculated as follows:

$$\text{Maximum Daily Limit} = LTA_m \times e^{(z_{99}\sigma - 0.5\sigma^2)} \quad \text{Equation 4. Maximum daily limit for toxics.}$$

Where:

LTA <sub>m</sub> = Minimum long-term average value	Lesser value calculated from Equation 2 and Equation 3
e = Base of natural log	Approximately 2.718
σ = Square root of σ <sup>2</sup>	
σ <sup>2</sup> = Ln(CV <sup>2</sup> +1)	Ln is the natural log of base e
Z <sub>99</sub> = z score of the 99th percentile of the normal distribution	2.326
CV = Coefficient of variation	Calculated using field data. If 10 or less, samples available use default value of 0.6.

$$AML = LTA_m \times e^{(z_{95}\sigma_n - 0.5\sigma_n^2)} \quad \text{Equation 5. Average monthly limit for toxics.}$$

Where:

LTA <sub>m</sub> = Minimum long-term average	Lesser value calculated from Equation 2 and Equation 3
AML = Average monthly limit	Calculated value
e = Base of natural log	Approximately 2.718
σ <sub>n</sub> = Square root of σ <sub>n</sub> <sup>2</sup>	
σ <sub>n</sub> <sup>2</sup> = Ln[(CV <sup>2</sup> )/n + 1]	Ln is the natural log of base e
Z <sub>95</sub> = z score of the 95th percentile of the normal distribution	1.645

n = Number of sample specified in the permit to be analyzed each month

Typically n = 1, 2, 4, 10, or 30.

CV = Coefficient of variation

Calculated using field data. If 10 or less, samples available use default value of 0.6.

## D. Compliance Schedule Levels

### Treatment Equivalent to Secondary (TES)

Idaho rules and federal regulations include special considerations to allow “treatment equivalent to secondary,” for treatment facilities with waste stabilization ponds (lagoons) and trickling filters. These provisions allow alternative limits for BOD<sub>5</sub> and TSS for such facilities, provided the following requirements are met (40 CFR 133.101(g) and 40 CFR 133.105(d)):

There are three requirements a facility needs to meet to qualify for equivalent to secondary treatment standards listed under 40 CFR 133.101(g), which states:

*“Facilities eligible for treatment equivalent to secondary treatment... Treatment works shall be eligible for consideration for effluent limitations described for treatment equivalent to secondary treatment (Section 133.105), if:*

*(1) The BOD<sub>5</sub> and SS effluent concentrations consistently achievable through proper operation and maintenance (Section 133.101(f)) of the treatment works exceed the minimum level of the effluent quality set forth in Sections 133.102(a) and 133.102(b),*

*(2) A trickling filter or waste stabilization pond is used as the principal process, and*

*(3) The treatment works provide significant biological treatment of municipal wastewater. Significant biological treatment (§133.101(k)) is defined as the use of an aerobic or anaerobic biological treatment process in a treatment works to consistently achieve a 30-day average of at least 65 percent removal of BOD<sub>5</sub>*

The minimum effluent limits for equivalent to secondary treatment from 40 CFR 133.105(a) and 40 CFR 133.105(b) are listed in Table 16

**Table 16 Equivalent to Secondary Treatment Effluent Limits (40 CFR 133.105).**

Parameter	30-day average	7-day average
BOD <sub>5</sub>	45 mg/L	65 mg/L
cBOD <sub>5</sub>	40 mg/L	60 mg/L
TSS	45 mg/L	65 mg/L
Removal for BOD <sub>5</sub> /cBOD <sub>5</sub> and TSS (concentration)	65% (minimum)	---
pH	within the limits of 6.0 - 9.0 s.u.	

Data is not available to determine if the current un-permitted facility meets the requirements for TES limits. However, because we do not expect the current facility to be capable of meeting secondary limits DEQ is requiring the least stringent possible limits that are still protective of WQS until the proposed facility is operational.

## **Appendix C. Your Right to Appeal**

Persons aggrieved, as specified in IDAPA 58.01.25.204.01.a., have a right to appeal the final permit decision. A Petition for Review must be filed with the Department's Hearing Coordinator within twenty eight (28) days after the Department serves notice of the final permit decision under IDAPA 58.01.25.107 (Decision Process).

All documents concerning actions governed by these rules must be filed with the Hearing Coordinator at the following address: Hearing Coordinator, Department of Environmental Quality, 1410 N. Hilton, Boise, ID 83706-1255. Documents may also be filed by FAX at FAX No. (208) 373-0481 or may be filed electronically. The originating party is responsible for retaining proof of filing by FAX. The documents are deemed to be filed on the date received by the Hearing Coordinator. Upon receipt of the filed document, the Hearing Coordinator will provide a conformed copy to the originating party. Additional requirements for appeals of IPDES final permit decisions can be found in IDAPA 58.01.25.204.

## **Appendix D. Public Involvement and Public Comments**

### **A. Public Involvement Information**

DEQ proposes to issue/issue a permit to insert the facility name. The permit includes wastewater discharge limits and other conditions. This fact sheet describes the facility and DEQ's reasons for requiring permit conditions.

DEQ placed a Public Notice of Draft on December 9<sup>th</sup> 2020 in Idaho County Free Press to inform the public and to invite comment on the draft Idaho Pollutant Discharge Elimination System permit and fact sheet.

The notice:

- Tells where copies of the draft permit and fact sheet are available for public evaluation (a local public library, the closest regional or field office, posted on our website).
- Offers to provide the documents in an alternate format to accommodate special needs.
- Asks people to tell us how well the draft permit would protect the receiving water.
- Invites people to suggest fairer conditions, limits, and requirements for the permit.
- Invites comments on DEQ's determination of compliance with antidegradation rules.
- Urges people to submit their comments, in writing, before the end of the comment period.
- Tells how to request a public hearing about the draft IPDES permit.
- Explains the next step(s) in the permitting process.



**DEQ SEEKS COMMENT ON DRAFT IDAHO POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT FOR CITY OF WHITE BIRD**

**PROPOSED ACTION:** The City of White Bird applied to the Department of Environmental Quality (DEQ) for an Idaho Pollutant Discharge Elimination System (IPDES) wastewater discharge permit for its municipal wastewater treatment facility located on River Road, White Bird, Idaho. The DEQ is seeking public comment on the draft IPDES permit, associated fact sheet, and application for the City of White Bird wastewater treatment facility. This proposed permit authorizes the discharge of treated municipal wastewater year-around to the Whitebird Creek for five years. The permit identifies the pollutants of concern and specifies associated discharge limits. Additionally, the permit specifies monitoring and reporting requirements necessary to ensure compliance, protect human health, and assure the integrity of Idaho's environment.

**PUBLIC COMMENT PERIOD:** Notice is given that DEQ has scheduled a period to receive public comments. Written comments on the draft permit and fact sheet will be accepted through January 8th, 2021, at 5 p.m. MST. A public meeting may be held if requested in writing by December 23<sup>rd</sup>, 2020. The draft permit and fact sheet are available for public review at DEQ's state office (1410 N. Hilton St., Boise, ID), Lewiston Regional Office (1118 F Street, Lewiston, ID), and on DEQ's website.

<http://www.deq.idaho.gov/news-public-comments-events/>

**SUBMISSION OF WRITTEN COMMENTS—ASSISTANCE ON TECHNICAL QUESTIONS:** Anyone may submit written comments regarding the proposed permit. To be most effective, comments should address water quality considerations and include supporting materials where available. Comments, requests, and questions regarding the public comment process should be directed to Matt Stutzman at the address below, or to the DEQ Web site at <https://www.deq.idaho.gov/news-public-comments-events/>. Please reference the City of White Bird and permit number (ID0021849) when sending comments or questions. All information regarding this matter, including the issuance of the final permit, will be available on DEQ's Web site.

Submit requests for a public meeting on the draft permit and fact sheet electronically on DEQ's website, by mail, or email to Lori Flook.

Lori Flook

Idaho Department of Environmental Quality

Surface & Wastewater Division

1410 N. Hilton St.

Boise, ID 83706

Email: [Lori.Flook@deq.idaho.gov](mailto:Lori.Flook@deq.idaho.gov)

Matt Stutzman

Idaho Department of Environmental Quality

Surface & Wastewater Division

1410 N. Hilton St.

Boise, ID 83706 Email: [matthew.stutzman@deq.idaho.gov](mailto:matthew.stutzman@deq.idaho.gov)

## B. Public Comments and Response to Comments

Idaho Pollutant Discharge Elimination System Discharge Permit No. ID0024252

Response to Comments on Draft White Bird IPDES Permit

January 8, 2021 comment deadline

### **ICL comments (email 12/18/2020):**

1. We appreciate that the City of White Bird POTW is being issued a discharge permit and that it now has the treatment technology and capacity necessary to meet Idaho and CWA requirements. ICL had previously raised serious concerns regarding the unpermitted discharge from this facility through a poorly located infiltration gallery into Whitebird Creek. We are pleased that this issue appears to have been resolved, as demonstrated by the 2019-2020 wastewater effluent characterization data following the upgraded treatment process. We plan to keep monitoring the effluent data from this facility during this initial permit cycle to ensure continued compliance with water quality standards.

Response: Thank you.

Changes: None.

2. Water quality samples taken by ICL prior to the POTW upgrading their treatment process indicated high levels of total phosphorus in the effluent (more than six times higher than levels in Whitebird Creek). DEQ states that increased sand filtration capability is reasonably believed to better remove phosphorus. DEQ should add phosphorus to the effluent monitoring requirements to evaluate whether the new filtration system is indeed reducing phosphorus to acceptable levels.

Response: Phosphorus is a pollutant of growing concern across the state and DEQ agrees that monitoring is warranted in this IPDES permit. Quarterly effluent monitoring for total phosphorus has been added to the 2021 permit.

Changes: Total phosphorus monitoring has been included in Table 2.1.2 of the permit at a frequency of once per quarter.

### **City of Boise comments (web page submittal 1/8/2021):**

1. Corrections to Definitions: 24-hour composite sample states that “The sample aliquots must be collected and stored in accordance with procedures prescribed in the most recent Standard Methods for the Examination of Water and Wastewater. We recommend that it should state that the samples be stored based on 40 CFR 136 regulations. If I understand

correctly, the Standard Methods are not actually "standard" until they are adopted into 40 CFR 136. This edit may reduce permittee confusion.

Response: Section 2.1.6 of the permit requires all monitoring to be conducted according test procedures approved in 40 CFR 136. Additionally section 2.1.7 of the permit requires the permittee to implement a QAPP that conforms to the quality assurance and quality control requirements found in 40 CFR Part 136.7. 40 CFR Part 136.7 states:

“These QA/QC procedures are generally included in the analytical method or may be part of the methods compendium for approved Part 136 methods from a consensus organization. For example, Standard Methods contains QA/QC procedures in the Part 1000 section of the Standard Methods Compendium.”

Included in part 1000 section of Standard Methods is Collection and Preservation of Methods that provides detail on 24-hour composite collection procedures that ensure samples collected will be representative.

DEQ agrees that the permittee is not necessarily required to follow *Standard Methods for the Examination of Water and Wastewater* and has changed the definition to reflect that samples must be collected in accordance with 40 CFR 136.

Changes: The definition for 24-hour composite sample in the permit has been changed from:

*“The sample aliquots must be collected and stored in accordance with procedures prescribed in the most recent Standard Methods for the Examination of Water and Wastewater.”*

To:

*“A combination of discreet sample aliquots of at least 100 milliliters, collected over periodic intervals from the same location over a 24-hour period. The composite may be flow or time proportional. The sample aliquots must be collected and stored in accordance with 40 CFR 136.”*

2. Corrections to Definitions: “Interference” is alphabetically out of order it should be after “instantaneous minimum”.

Response: DEQ agrees and appreciates the observation.

Changes: The definition for “Interference” has been placed in alphabetical order.

3. Corrections to Definitions: Method detection limit- the definition is consistent with the IPDES User Guidance however the definition has been updated in the Clean Water Act Method Update Rule for the Analysis of Effluent (MUR 2017). The new revision to the MDL procedure in Appendix B of 40CFR 136 requires laboratories to account for levels of contamination, be representative of multiple instruments-not just the most sensitive instrument and to run the spiked solutions and blanks quarterly to account for drift over time. The new definition is “The method detection limit (MDL) is defined as the

minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results.”

Response: DEQ agrees that the definition in the permit should be updated to reflect the current 40 CFR 136 definition.

Changes: The definition for MDL has been updated in the permit.

4. The use of Method Detection Limit and Minimum Level throughout the draft permit may be confusing to permittees.

For example:

Section 2 states that the permittee must use sufficiently sensitive methods to detect and quantify the pollutant to a level of precision that is at or below the level of the applicable water quality criterion for parameters without effluent limits. Table 5 includes ammonia, the criterion is currently an equation. An undefined ML to meet this may be confusing.

For BOD, TSS and E. coli the table lists to report the maximum daily value, average daily value, analytical method and ML or MDL. Shouldn't the MDL and ML (or IML) both be listed? Recommend the text be updated to say that the BOD, TSS and E.coli are reported to the MDL, or ML if applicable.

Response: By not requiring the permittee to meet a particular MDL or use a particular test method, DEQ is providing as much flexibility as allowed while still ensuring the permittee is collecting useful and compliant data. In some instances it may be necessary to require a particular detection level or method, but that is not the case in this permit. To better explain what is meant by sufficiently sensitive the definition as found in 40 CFR Part 122.21(e) and required in 40 CFR 136.1(c) has been included in the permit.

The example for ammonia is interesting situation but is not likely to be an issue in this permit. Typical lab reports for ammonia tests report MLs of 0.1 mg/L which is at least 10 times lower than calculated WQC of 3.15 mg/L acute and 1.02 mg/L chronic as provided in section 3.3.3.1 of the fact sheet.

The provided example regarding reporting ML or MDL for BOD, TSS, and E. coli in Table 7 of the permit refers specifically to monitoring required for reapplication. IDAPA 58.01.25.105.11.g.iii(4) states the permittee is required to provide for each parameter:

*“The threshold level, such as the method detection limit, minimum level, or other designated method endpoint for the analytical method used;”*

Changes: The definition for sufficiently sensitive has been added to the permit.

